

### **REMARKS**

In the Office Action, the Examiner rejected claims 1-6 pursuant to 35 U.S.C. § 102(b) as anticipated by Hossack, et al. (U.S. Patent No. 5,873,830). Claims 14 and 15 were rejected pursuant to 35 U.S.C. § 103(a) as unpatentable over Hossack, et al. in view of Melton, Jr., et al. (U.S. Patent No. 5,373,848). Claims 23 and 24 were rejected pursuant to 35 U.S.C. § 103(a) as unpatentable over Hossack, et al. in view of Hossack, et al. (U.S. Patent No. 6,083,168), hereinafter Hossack 2.

The Office Action Summary listed Claims 1-15 and 23-25 as rejected. However, the Detailed Action initially states that "Claim 1 is rejected" and then individually addresses only claims 1-6, 14, 15, 23, and 24. It is respectfully submitted that the Office Action fails to address claims 7-13 and 25 in any fashion. For this reason, an indication of allowable subject matter or a non-final office action is requested. Any subsequent rejection of claims 7-13 and 25 could not be considered previously presented and, accordingly, a final rejection would not be proper according to M.P.E.P. §706.07(a). Further, all claims are in condition for allowance for the reasons set forth below.

Independent claim 1 recites altering an acquisition scan plane position relative to a transducer as a function of the motion. Hossack, et al. do not disclose this limitation.

Hossack, et al. perform three functions based on measured motion, as identified in the Abstract. First, in one embodiment, a motion-compensated interpolated image inside a region of interest is formed in response to measured image motion (col. 14, lines 17-20). This is illustrated in step 1030 of Fig. 10, which involves generating and inserting a motion-compensated interpolated image inside the region of interest. Generating an interpolated image does not provide altering an acquisition scan plane position relative to a transducer as a function of the motion. Second, in another embodiment, a controller automatically applies certain imaging parameters in a region of interest in the ultrasound-image frame to optimize system performance (col. 17, lines 63-66). Imaging parameters, include: line density, number of transmit foci per scan line, pre-detection filter characteristics, post-detection filter characteristics, post-processing maps, ultrasound operating frequency, transmit power,

logarithmic compression profiles, numbers of multiple receive lines per transmit line, transmit pulse shape, receive frequency band, and persistence (col. 18, lines 20-27). None of these imaging parameters teach or suggest altering an acquisition scan plane position relative to a transducer as a function of the motion. Third, in yet another embodiment, the controller may automatically alter the operation mode of the transducer array in response to an absence of detected image motion (col. 18, lines 60-65). Altering the operation mode includes interrupting power from the transducer or inducing a sleep mode (col. 19, lines 5-21). Neither of these potential alterations to the operation mode of the transducer teaches or suggests automatically altering an acquisition scan plane position relative to a transducer as a function of the motion.

Further, there are no additional suggestions of automatically altering a scan plane position relative to a transducer as a function of the motion anywhere in Hossack, et al. including the abstract and claims 1 and 2 as cited by the Examiner. For these reasons, it is respectfully submitted that Hossack, et al. does not anticipate claim 1 and claim 1 is in condition for allowance. Dependent claims 2-15 and 23-25 are allowable for the same reasons as independent claim 1.

Claim 4 recites translating and rotating an acquisition scan plane to the acquisition scan plane position. As discussed above, Hossack, et al. does not teach translating and rotating an acquisition scan plane to the acquisition scan plan position as required by claim 4.

Claim 10 recites transmitting at least three grouped sets of beams spaced apart within the three-dimensional volume, determining a direction and a magnitude of motion from data responsive to the at least three grouped sets of beams, and altering the acquisition scan plane position as a function of the at least three directions and at least three magnitudes. Hossack, et al. does not disclose altering an acquisition scan plane position as a function of three directions and three magnitudes as required by claim 10. For this reason, claim 10 is in condition for allowance.

Claim 14 recites tracking one of speckle and a spatial gradient. The Office Action relies on Melton, Jr. for this limitation. Melton, Jr. et al. states "this means that the volume is symmetric with respect to the spatial gradient along any axis that passes through its center (not just the x-y-z system shown in the figures)." This is not related to tracking motion using a spatial gradient as required by claim 14. Melton, Jr. merely mentions the term "spatial

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gradient," and does not teach tracking one of a speckle and spatial gradient.

A person of ordinary skill in the art would not have used the teachings of Melton, Jr. with Hossack, et al.. Melton, Jr. et al. is unrelated to Hossack, et al. Therefore, Melton, Jr et al. should be considered nonanalogous art, and the rejection of claims 14 and 15 should be withdrawn, according to M.P.E.P. §2141.01(a).

Claim 23 requires obtaining data for motion tracking in response to different acquisition parameters than used for imaging. The Office Action relies on Hossack 2 for this limitation. Hossack 2 does not teach or suggest obtaining data for motion tracking in response to different acquisition parameters than used for imaging. Therefore, the rejection of claim 23 over Hossack, et al. in view of Hossack 2 should be withdrawn.

Claim 24 requires automatically altering an acquisition volume position relative to a transducer as a function of the motion. The Office Action asserts this is taught by Hossack 2 because the operating mode of the transducer array is altered in response to an absence of measured motion (Office Action, page 3). However, the operating mode discussed by Hossack 2 includes interrupting power from the transducer or inducing a sleep mode (col. 19, lines 7-23). Interrupting power or inducing sleep mode is not altering an acquisition volume position relative to a transducer. Therefore, the rejection of claim 24 over Hossack, et al. in view of Hossack 2 should be withdrawn.

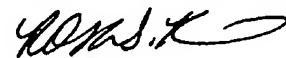
### CONCLUSION

Applicants respectfully submit that all of the pending claims are in condition for allowance and seeks early allowance thereof. If for any reason, the Examiner is unable to allow the application but believes that an interview would be helpful to resolve any issues, the Examiner is respectfully requested to call Craig Summerfield at (312) 321-4726.

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